

That which is claimed is:

1. A method for determining the position of a mobile terminal comprising:

5 determining the position of the mobile terminal based on signals received at the mobile terminal from satellite positioning system transmitters and location assistance information received at the mobile terminal from an ad hoc protocol wireless transmitter.

10 2. The method of Claim 1 wherein the ad hoc protocol wireless network transmitter comprises a Bluetooth protocol transmitter.

3. The method of Claim 1 wherein the satellite positioning system transmitters comprise Global Positioning System (GPS) satellites.

15 4. The method of Claim 1 wherein determining the position includes:
transmitting a service discovery request configured for receipt by the ad hoc protocol wireless network transmitter;
receiving a response to the service discovery request from the ad hoc protocol wireless network transmitter indicating availability of the location assistance
20 information from the ad hoc protocol wireless network transmitter; and
receiving the location assistance information from the ad hoc protocol wireless transmitter.

25 5. The method of Claim 4 wherein the mobile terminal is configured to communicate with a wide area wireless communication network configured to provide wireless communication services based on an associated communication protocol that supports provision of location assistance information to the mobile terminal and wherein the method further comprises:
determining availability of the wireless communication network to the mobile
30 terminal; and
obtaining the location assistance information from the wireless communication network.

6. The method of Claim 5 wherein location assistance information received from the ad hoc protocol wireless network and location assistance information received from the wireless communication network share a common format for use in determining the position of the mobile terminal.

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7. The method of Claim 6 wherein the wireless communication network comprises a Global System for Mobile communications (GSM) network and wherein the common format is based on a radio resource location services protocol (RRLP).

10 8. The mobile terminal of Claim 5 wherein determining the position further comprises selecting the ad hoc protocol wireless transmitter or the wireless communication network to provide the location assistance information.

15 9. The method of Claim 4 wherein the location assistance information includes an identification of locally visible satellites.

10 10. The method of Claim 4 wherein determining the position further comprises the following performed by the ad hoc protocol wireless transmitter:
receiving the service discovery request;
obtaining the location assistance information; and
transmitting the obtained location service information to the mobile terminal.

25 11. The method of Claim 10 wherein obtaining the location assistance information comprises obtaining the location assistance information from a location server having a satellite positioning system receiver.

30 12. The method of Claim 10 wherein the ad hoc protocol wireless transmitter includes a satellite positioning system receiver and wherein obtaining the location assistance information comprises obtaining the location assistance information from a storage device of the ad hoc protocol wireless transmitter based on signals received by the satellite positioning system receiver.

13. A method for providing location assistance information to a mobile terminal comprising the following performed by an ad hoc protocol wireless transmitter:

5 receiving from the mobile terminal a service discovery request configured for receipt by the ad hoc protocol wireless transmitter to determine availability of location assistance information;

transmitting a response to the service discovery request indicating availability of the location assistance information from the ad hoc protocol wireless network transmitter; and

10 transmitting the location assistance information to the mobile terminal.

14. The method of Claim 13 wherein the ad hoc protocol wireless network transmitter comprises a Bluetooth protocol transmitter.

15 15. The method of Claim 13 further comprising obtaining the location assistance information from a location server having a satellite positioning system receiver.

20 16. The method of Claim 13 wherein the ad hoc protocol wireless transmitter includes a satellite positioning system receiver and wherein the method further comprises obtaining the location assistance information from a storage device of the ad hoc protocol wireless transmitter based on signals received by the satellite positioning system receiver.

25 17. A method for determining the position of a mobile terminal comprising the following performed by the mobile terminal:

receiving location signals from satellite positioning system transmitters;

receiving location assistance information from a wide area wireless communication network in an associated format defined by a protocol of the network;

30 receiving location assistance information from a local wireless transmitter in the associated format, wherein the local wireless transmitter and the wide area wireless communication network are uncoordinated and have different associated wireless transmission protocols; and

determining the position of the mobile terminal based on the received location signals from the satellite positioning system transmitters and location assistance information received from either the wide area wireless communication network or the local wireless transmitter.

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18. The method of Claim 17 wherein the local wireless transmitter comprises an ad hoc protocol wireless transmitter.

19. The method of Claim 18 wherein the ad hoc protocol wireless network
10 transmitter comprises a Bluetooth protocol transmitter.

20. The method of Claim 18 further comprising the following performed by the ad hoc protocol wireless transmitter:
obtaining the location assistance information from a location server having a
15 satellite positioning system receiver.

21. The method of Claim 18 wherein the ad hoc protocol wireless transmitter includes a satellite positioning system receiver and wherein the method further comprises the following performed by the ad hoc protocol wireless
20 transmitter:
obtaining the location assistance information from a storage device of the ad hoc protocol wireless transmitter based on signals received by the satellite positioning system receiver.

22. The method of Claim 17 wherein the local wireless transmitter
25 comprises a wireless local area network.

23. The method of Claim 22 wherein receiving location assistance information from a local wireless transmitter further comprises obtaining the location
30 assistance information over the wireless local area network from a location server having a satellite positioning system receiver.

24. The method of Claim 23 wherein obtaining the location assistance information over the wireless local area network from a location server having a

satellite positioning system receiver includes providing a universal resource locator (URL) of the location server from the mobile terminal to the wireless local area network.

5 25. The method of Claim 23 wherein the wireless local area network comprises an 802.11 series protocol network.

 26. A position determination circuit for a mobile terminal comprising:
 a satellite positioning system signal processing circuit configured to process
10 location signals from satellite positioning system transmitters;
 a wireless transceiver configured to communicate with an ad hoc protocol
wireless transmitter to request and receive location assistance information; and
 a position computation circuit configured to determine a position of the mobile
terminal based on signals from the satellite positioning system signal processing
15 circuit and the location assistance information from the ad hoc protocol wireless
transmitter provided by the wireless transceiver.

 27. The position determination circuit of Claim 26 wherein the wireless
transceiver is further configured to transmit a service discovery request to the ad hoc
20 protocol wireless transmitter to determine if location assistance information is
available from the ad hoc protocol wireless transmitter.

 28. The position determination circuit of Claim 27 wherein the ad hoc
protocol wireless network transmitter comprises a Bluetooth protocol transmitter.
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 29. A mobile terminal including the position determination circuit of
Claim 26.

 30. A position determination circuit for a mobile terminal comprising:
30 a satellite positioning system signal processing circuit configured to process
location signals from satellite positioning system transmitters;
 a wireless transceiver configured to communicate with a wide area wireless
communication network in an associated format defined by a protocol of the network
to request and receive location assistance information;

a wireless transceiver configured to communicate with a local wireless transmitter in the associated format to request and receive location assistance information, wherein the local wireless transmitter and the wide area wireless communication network are uncoordinated and have different associated wireless transmission protocols; and

a position computation circuit configured to determine the position of the mobile terminal based on the location signals from the satellite positioning system transmitters and location assistance information received from either the wide area wireless communication network or the local wireless transmitter.

31. The position determination circuit of Claim 30 wherein the local wireless transmitter comprises an ad hoc protocol wireless transmitter.

32. The position determination circuit of Claim 30 wherein the local wireless transmitter comprises a wireless local area network.

33. A mobile terminal including the position determination circuit of Claim 30.

34. A location assistance information provider apparatus comprising:
an ad hoc protocol wireless receiver configured to receive service discovery requests from mobile terminals to determine availability of location assistance information;

an ad hoc protocol wireless transmitter configured to transmit a response to a received service discovery request indicating availability of the location assistance information from the location assistance information provider and to transmit location assistance information to requesting mobile terminals; and

a location assistance information access circuit configured to obtain the location assistance information and provide obtained location assistance information to the ad hoc protocol wireless transmitter.

35. The apparatus of Claim 34 wherein the ad hoc protocol comprises Bluetooth.

36. The apparatus of Claim 34 further comprising a satellite positioning system receiver.